In the Claims:

This listing of the claims replaces all prior listings of the claims:

1. (Currently Amended) A device for the manipulation of a suspended particle in an electric field gradient comprising:

a plurality of electrically isolated electrodes on a surface; and

a liquid composition on said plurality of electrodes, said liquid composition covering said surface continuously between adjacent ones of said plurality of electrodes, said liquid composition having an exposed liquid surface for suspending a particle;

said plurality of electrodes configured to provide an electric field gradient for transporting the particle suspended in said liquid composition; and

a particle suspended in said liquid composition, wherein said particle does not directly contact said plurality of electrodes.

2. (Original) The device of Claim 1, wherein said liquid composition is selected from the group consisting of perfluorinated oil, silicone oil, fluorocarbons, hydrocarbons, and/or chemical and/or physical combinations thereof.

3. (Canceled).

4. (Original) The device of Claim 1, wherein said particle comprises a solid particle.

5. (Original) The device of Claim 3, wherein said particle comprises a fluid droplet.

6. (Original) The device of Claim 5, wherein said fluid droplet includes a carried component suspended, dissolved, or solubilized therein.

7. (Original) The device of Claim 6, wherein said fluid droplet comprises water and said carried component is selected from the group consisting of nanoparticles, microparticles, surfactants, proteins, cells, viruses, drugs, toxins, chemical compounds, or combinations thereof.

8. (Original) The device of Claim 6, wherein said fluid droplet comprises hydrocarbon or an organic compound and said carried component is selected from the group consisting of nanoparticles, microparticles, polymers, polymerizable monomers, surfactants, silicone compounds, and/or combinations thereof.

9. (Original) The device of Claim 5, wherein said fluid droplet has a volume between about 0.01 μL and about 10 μL.

10. (Original) The device of Claim 1, wherein said plurality of electrodes are configured to provide a first pathway for a first particle and a second pathway for a second particle, said first pathway and said second pathway having an intersection for combining said first particle and said second particle.

11. (Original) The device of Claim 1, wherein ones of said plurality of electrodes comprises a conductive ring.

12. (Original) The device of Claim 1, wherein said plurality of electrodes are configured in a two-dimensional matrix.

13. (Original) The device of Claim 11, wherein said surface includes a first side having said plurality of electrodes positioned thereon, and a second side having a plurality of leads electrically connected to said plurality of electrodes, ones of the plurality of leads being connected to an alternating current source, a direct current source or ground, wherein the positions of said plurality of electrodes are selected to provide a dynamic non-uniform

electric field pattern for transporting a particle along a pathway.

14. (Original) The device of Claim 11, wherein said plurality of electrodes have a length of between about 0.1 and about 1 mm and a distance between adjacent ones of said plurality of electrodes between about 0.1 mm and about 1 mm.

15. (Original) The device of Claim 1, further comprising a power source connected to said plurality of electrodes, said power source configured to provide an alternating current (AC) voltage of between about 50 V and about 500 V at a frequency between about 50 Hz and about 500 Hz to ones of said plurality of electrodes.

16. (Original) The device of Claim 1, further comprising a power source connected to said plurality of electrodes, said power source configured to provide a direct current (DC) voltage between about 20 and about 500 V to ones of said plurality of electrodes.

17. (Original) The device of Claim 1, wherein said plurality of electrodes are configured to provide an electric field gradient for applying force to a droplet suspended in the liquid fluid in opposing directions for separating the droplet into two droplets.

18. (Original) A method for the manipulation of a suspended particle in an electric field gradient comprising:

configuring a plurality of electrodes on a surface to provide an electric field gradient for transporting a particle;

applying a liquid composition on the plurality of electrodes, the liquid composition having an exposed liquid surface for suspending a particle;

suspending the particle in the liquid composition;

applying a voltage between selected ones of the plurality of electrodes to provide the electric field gradient, the electric field gradient having a pattern that defines a pathway for

transporting the particle; and

transporting the particle along the pathway defined by the electric field gradient, wherein the particle does not directly contact the plurality of electrodes.

19. (Original) The method of Claim 18, wherein the liquid composition is selected from the group consisting of perfluorinated oil, silicone oil, fluorocarbons, hydrocarbons, and/or chemical and/or physical combinations thereof.

20. (Canceled).

21. (Original) The method of Claim 20, wherein the particle comprises a solid particle.

22. (Original) The method of Claim 20, wherein the particle comprises a fluid droplet.

23. (Original) The method of Claim 22, wherein the fluid droplet further comprises a carried component suspended, dissolved, or solubized therein.

24. (Original) The method of Claim 23, wherein the fluid droplet comprises water and the carried component is selected from the group consisting of nanoparticles, microparticles, surfactants, proteins, cells, viruses, drugs, toxins, chemical compounds, or combinations thereof.

25. (Original) The method of Claim 23, wherein the fluid droplet comprises hydrocarbon or an organic material and the carried component is selected from the group consisting of a nanoparticle, a microparticle, a polymer, a polymerizable monomer, a surfactant, a silicone compound, and/or combinations thereof.

26. (Original) The method of Claim 23, wherein the fluid droplet has a volume between about 0.01 μL and about 10 μL.

27. (Original) The method of Claim 18, wherein the pattern of the electric field gradient further defines a second pathway, the first pathway and the second pathway having a common intersection, the method comprising:

transporting a second particle along the second pathway; and

combining the first particle and the second particle at the intersection between the first pathway and the second pathway.

28. (Original) The method of Claim 27, wherein the first droplet and the second droplet comprise constituents of an assay.

29. (Original) The method of Claim 27, further comprising chemically reacting constituents of the first droplet with constituents of the second droplet.

30. (Original) The method of Claim 27, wherein said combining step further comprises forming a solid and/or encapsulated particulate product.

31. (Original) The method of Claim 18, wherein ones of the plurality of electrodes comprises a conductive ring.

32. (Original) The method of Claim 18, further comprising configuring said plurality of electrodes in a two-dimensional matrix.

33. (Original) The method of Claim 18, wherein the surface includes a first side having the plurality of electrodes positioned thereon, and a second side having a plurality of leads electrically connected to the plurality of electrodes, further comprising:

connecting ones of the plurality of leads to an alternating current source, a direct

current source or ground; and

selecting the positions of the plurality of electrodes to provide a dynamic non-uniform electric field pattern for transporting the particle along the pathway.

34. (Original) The method of Claim 18, wherein ones of the plurality of electrodes have a length of between about 0.1 and about 1 mm and the distance between electrodes ranges from between about 0.1 mm to about 1 mm.

35. (Original) The method of Claim 18, further comprising applying an alternating current (AC) voltage of between about 50 V and about 500 V at a frequency between about 50 Hz and about 500 Hz to ones of the plurality of electrodes.

36. (Original) The method of Claim 18, further comprising applying a direct current (DC) voltage between about 20 and about 500 V to ones of the plurality of electrodes.

37. (Original) The method of Claim 18, further comprising:

providing an electric field gradient that applies force to a droplet suspended in the liquid fluid in two directions; and

separating the droplet into two droplets by applying the electric field gradient.